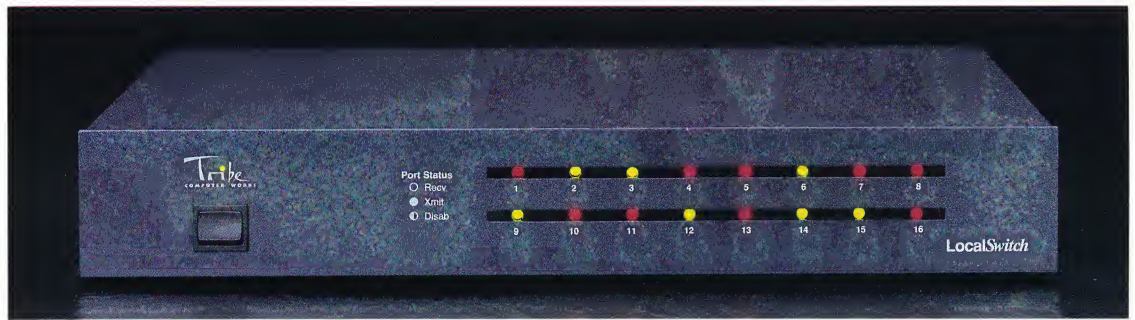


Features:

- Eliminates LocalTalk bottlenecks
- Processes up to 16 simultaneous network transmissions at full LocalTalk speed
- Replaces a StarController— uses same twisted pair wiring and plug
- Increases network bandwidth to over 3.6 Mbps
- Cost-effective and flexible alternative to Ethernet
- Easy installation— automatic learning of network configuration
- Supports multiple devices per port providing economical access to the network
- Simple network expansion by linking ports of separate hubs
- No degradation of performance as hubs are linked
- Supports multiple-port trunks to increase access to other hubs or Ethernet
- Up to 254 nodes per zone before requiring a bridge
- Increases network security by delivering data only to intended users
- Supports multiple network topologies including distributed star, backbone and branching
- Transparent to all high level protocols
- Full management capability across internet



LocalSwitch

A 3.6 Mbps packet switch for Macintosh networks

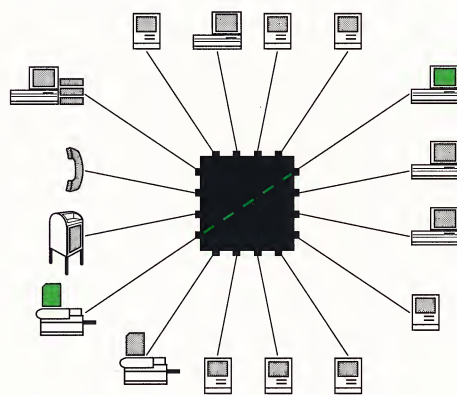
LocalSwitch™ is a 16-port, packet-switching hub for Macintosh networks. Using standard LocalTalk protocol and twisted pair wiring, LocalSwitch redefines the solution to a network's traffic problem by opening more roadways, instead of raising the speed limit.

The shortfall of LocalTalk is its method of transmission, not its transmission rate. With only one packet at a time passing through the network, multiple users must wait for access. Until now, the only answer was the expensive and complicated leap to Ethernet.

LocalSwitch offers a very different solution. By processing many network transmissions at once, LocalSwitch allows LocalTalk to perform to its full potential. LocalSwitch dynamically creates direct links between its 16 ports. These links instantaneously deliver packets to their destination ports. By opening the traffic bottleneck that degrades LocalTalk, LocalSwitch brings high-bandwidth performance to your existing network—at a fraction of the cost of Ethernet.

The LocalTalk Bottleneck

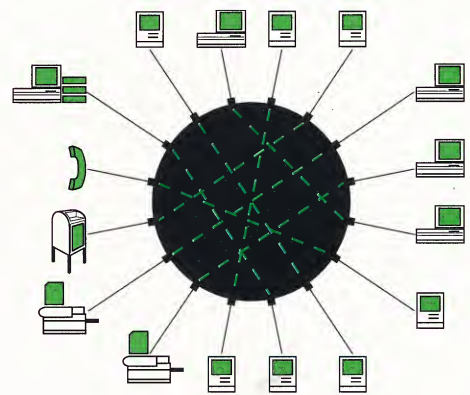
A LocalTalk network is similar to a telephone party line. On a party line, only one person can talk at any one time. That constraint is tolerable if there are only two or three people on the line. But as the group grows, each participant must wait for a pause in the conversation in order to speak. LocalTalk uses this same approach when it sends information packets. Each user's task monopolizes the available network bandwidth (230 kilobits per second). So two users of different network services will dramatically impair each other's progress. Increase the number of active users to 10 or 15 and the network becomes intolerably slow.



Active Star

The Power of a Packet Switch

LocalSwitch dynamically creates "direct lines" between any two of its 16 ports. Just as a PBX opens direct lines between telephone callers to allow multiple, simultaneous conversations, LocalSwitch creates links from source to destination ports, processing multiple network transmissions at peak LocalTalk speed. Delivering up to 3.6 megabits per second of bandwidth to your existing star-wired network (230 Kbps per port), LocalSwitch can process over 16 times more network activity than a conventional active star.



LocalSwitch

Easy Upgrade

Simply unplug your StarController™ (or other active star hub) and plug in LocalSwitch and your network is transformed. Using the same twisted-pair adapters, phone wiring and 50-pin plugs as most popular LocalTalk hubs, LocalSwitch will increase the capacity of your network without increasing its complexity. LocalSwitch automatically learns your network configuration and is transparent to all high-level protocols. Each port also acts as a signal repeater so devices up to 3000 feet away will not require a separate concentrator.

LocalSwitch

A 3.6 Mbps packet switch for Macintosh networks

Functional Description

Fast-packet Switching. LocalSwitch filters traffic on each of its 16 ports, forwarding data packets to only their addressed destinations. As a packet enters LocalSwitch, its destination port is determined by reading the packet header. With the address decoded, high performance switching enables the first portion of the packet to exit from the destination port, even before the entire packet has been read into the source port. This fast-packet switching results in negligible forwarding delays while directly linking users with their desired network devices.

Reduced Packet Collisions. Multiple access to the same port is efficiently regulated without the packet collision of unswitched networks. Buffers are provided to temporarily store packets destined for busy ports. The packets are delivered as soon as their destinations are clear.

The Switched LocalTalk Advantage

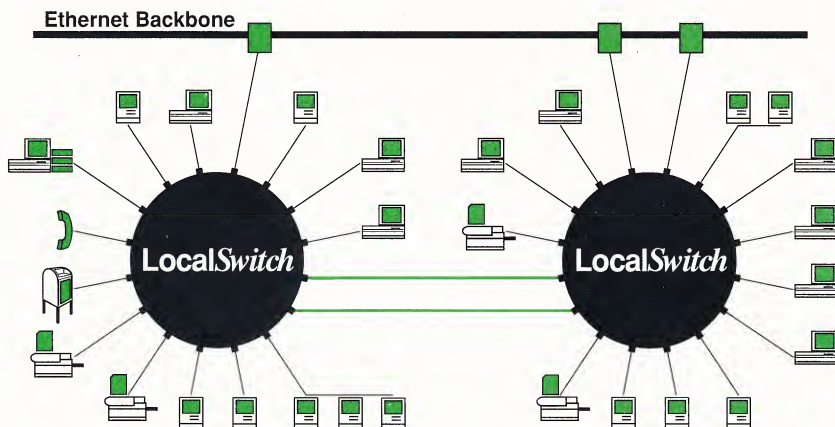
Designed for User-Level Activity. As network services become more distributed, and local file sharing and Inter-Application Communication (IAC) become standard among your users, point-to-point network traffic will increase. The many direct paths through LocalSwitch are perfectly suited for this type of network activity.

Matches CPU Speed. Processing overhead associated with network packet preparation prevents efficient use of costly Ethernet at the user level. The primary advantage of Ethernet over traditional LocalTalk is that many users can access the network simultaneously, without exhausting the available bandwidth. LocalSwitch achieves the same result with multiple, parallel LocalTalk channels.

Cost-Efficient Integration with Ethernet. More than one port of LocalSwitch can be connected to routers, allowing multiple, parallel access to Ethernet services. With only a portion of users needing Ethernet at any one time, multiple dedicated channels onto a backbone are cost-effective.

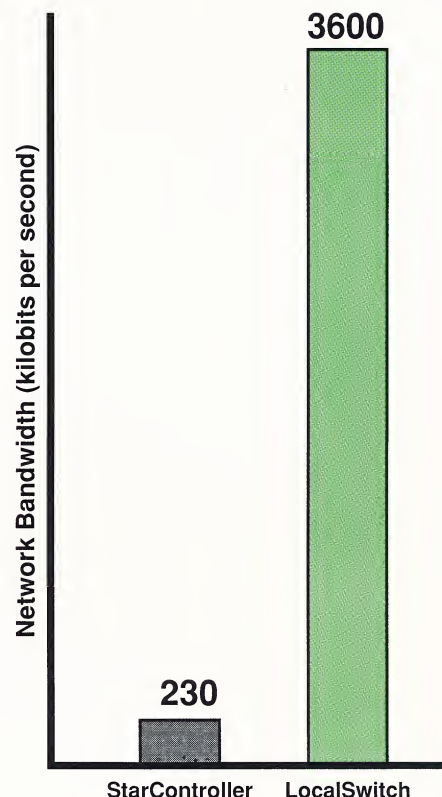
A New Architecture

Flexible. The switching power of each port can be distributed to users in the same way direct telephone lines are assigned within a workgroup—according to need. A group of users who do not often need the resources of the network can share one LocalSwitch port. These users can be linked together in a simple bus and still retain access to network resources through a shared port. Active users need their own direct lines. By connecting most users to a dedicated port, each of their demanding tasks will be routed instantaneously to the appropriate destination.



Expandable. By connecting two ports of separate LocalSwitch hubs, two unique sub-networks are formed with no need for an expensive bridge. Packets bound for addresses on other hubs are automatically sent through the appropriate port. The rest stay within the local hub—away from other network activity. As traffic between two LocalSwitch hubs increases, additional ports can be connected to add to the capacity of the link. Packets destined for another hub will be switched to the first link port that is not busy.

Bandwidth Grows with Network. Each LocalSwitch adds to network bandwidth. Traditional architectures, including Ethernet, become saturated as more users are brought onto the network. A LocalSwitch network can grow to 254 nodes with a total bandwidth of more than 58 megabits per second before requiring a bridge or router. The bandwidth of a LocalSwitch network is additive, with consistent performance within each hub.



Full Management Capability

Network management software allowing managers to query and control any LocalSwitch across a large internet is included. Each LocalSwitch automatically collects statistics on packet count, traffic intensity and error rates. This data can be accessed by any Macintosh on the internet that is running the LocalSwitch software.

Specifications

Filter/forward rate	100% LocalTalk packets
Addresses per port	254 active addresses
Routing delay	600 µsecs (approx.)
Buffer size	1,024 bytes per port
Number of ports	16
Routing table	Automatic, self-learning
LAN interface	LocalTalk UTP interface, 50-pin RJ-21
Protocol Compatibility	Uses LLAP, DDP, NBP, RTMP, ZIP. Transparent to all AppleTalk protocols
Processor hardware	Eight Z86C91 MCUs running at 19 MHz
Dimensions	2.5" x 17" x 13"
Power Consumption	75 watts

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